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A New Species of *Pueraria* (Leguminosae) from Guizhou, China

Hiroyoshi OHASHI

Botanical Garden, Tohoku University, Sendai, 980-0862 JAPAN
E-mail: ohashi@mail.tains.tohoku.ac.jp

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A new species, *Pueraria bouffordii* H. Ohashi, is described from Guizhou, China. It is characteristic in having retrorse hairy inflorescence and small white flowers with purple tips of wings and keel-petals.

Key words: China, Guizhou, Leguminosae, new species, *Pueraria*.

During an examination of unnamed specimens of *Pueraria* borrowed from the Herbarium of the Arnold Arboretum of Harvard University, I found an unknown specimen collected by the Sino-American Guizhou Botanical Expedition team in Guizhou, China, in 1986. According to Dr. D. E. Boufford, one of the participants of the team, there were only two sheets collected, so the other one is at the Guizhou Institute of Biology in Guiyang. The plant was determined as *Pueraria* by the team (probably by Dr. Boufford). I also treat it as *Pueraria* because it has large 3-foliolate leaves with 3-lobed broadly ovate terminal leaflets, a pseudoracemose inflorescence of which the axis is nodose, 5-lobed calyx in which the upper two lobes connate into one, and an elongate, sessile ovary, although I could examine only one sheet of the specimen. *Pueraria* is one of the taxonomically best-known genera of the tribe Phaseoleae in Leguminosae following the recent contributions of Maesen (1985, 1994) and Wu (1995). Moreover, I have studied morphological variations of *P. lobata* (Willd.) Ohwi and *P. montana* (Lour.) Merr. which are the most polymorphic species among the genus (Ohashi et al. 1988). Based on these works I decided to describe the plant as a new species, because it is unique among the genus in having retrorse hairs only on the inflorescence axis and small white flowers with tips of wings and keel-petals purple. Unfortunately, the stipules and pods of the plant are unknown and its range of variation for the leaves, inflorescences and flowers appears to be unsufficiently known.

Pueraria bouffordii H. Ohashi, sp. nov. [Figs. 1, 2]

Species insignis indumento retroflexo in inflorescentia, floribus parvi, petalis albi praeter purpureum ad apiceum ala et carina, a speciebus nobis notis bene distincta.

Herba perennis; caulis volubilis, adpresse sericeus. Folia petiolata, pinnata, trifoliolata; petiolo sulcato, adpresse piloso, 9–10 cm longo, rhachis 3 cm longa; stipellis linearis, 4 mm longis; foliola late ovata, subtus aeque adpresse sericea, nervis lateralibus validis 5–7 utrinsecus costam validam praedita; terminalia leviter triloba, ad 14.5 cm longa et ad 12 cm lata; lateralia valde obliqua. Pseudoracemus (axillaris tantum visus) ramosus, ad 17 cm longus, ad basim bracteatus, densiflorus, axibus dense adpressis retroflexis sericeis. Pedicelli

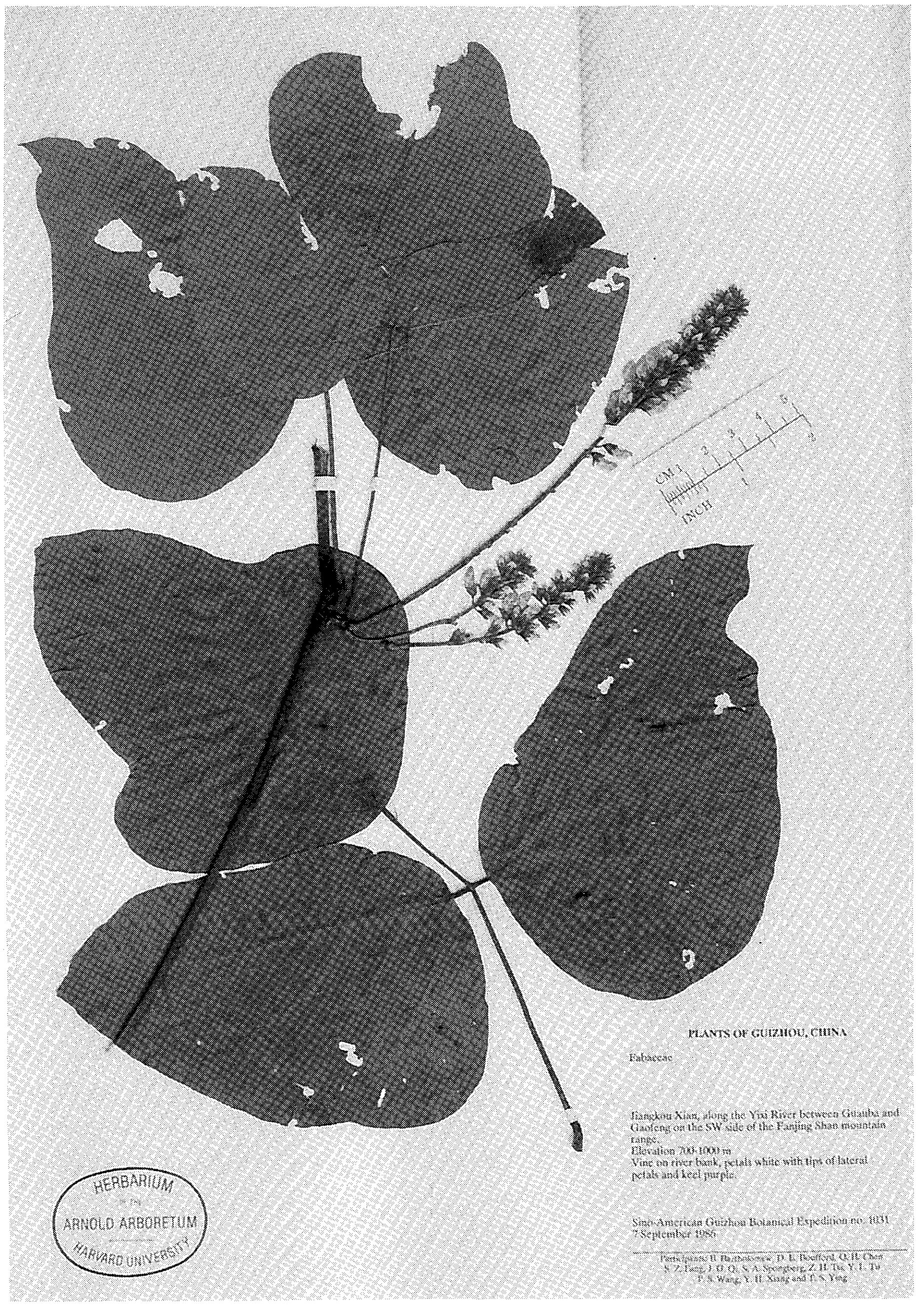
PLANTS OF GUIZHOU, CHINA
Fabaceae
Jiangkou Xian, along the Yixi River between Guanba and Gaofeng on the SW side of the Fanjing Shan mountain range.
Elevation 700-1000 m
Vine on river bank, petals white with tips of lateral petals and keel purple.
Sino-American Guizhou Botanical Expedition no. 1031
7 September 1986
HERBARIUM
ARNOLD ARBORETUM
HARVARD UNIVERSITY
CM 1 2 3 4 5
INCH 1 2

Fig. 1. Holotype of *Pueraria bouffordii* H. Ohashi.

breves, 3–4 mm longi, dense adpressi vel patentes sericeis. Calyx campanulatus, 5-partitus, 5–6 mm longus, dense sericeus, tubo ca. 2.5 mm longo, laciniis inaequilongis, superioribus connatis 3 mm longis, apice obtusis et minutissime bi-

apiculatis, lateralibus ca. 2 mm longis 2 mm latis, apice obtusis, infimo 2.5–3 mm longo 2 mm lato, apice acuminatis. Vexillum album, late ellipticum vel fere circularis, emarginatum, auriculatum, basi callosum, unguiculatum, ungue ca. 1 mm longo. Alae lamina alba apice purpurea, anguste oblonga, apice obtusa, minute auriculata, ungue 2.5 mm longo. Carinae laminae albae apice purpureae, oblongae, apice obtusae, basi non auriculatae, unguiculatae, unguibus ca. 2.5 mm longis. Staminae monadelphae, 10–10.5 mm longae. Ovarium elongatum, 7 ovulatum, sericeum; stylo glabro, basi leviter incrassato, apice filiformi; stigma terminale basi pilis minutis induta.

Typus. China. Guizhou. Jiangkou Xian, along the Yixi River between Guanba and Gaofeng on the SW side of the Fanjing Shan mountain range. Elevation 700–1000 m. Vine on river bank, petals white with tips of lateral petals and keel purple. Sino-American Guizhou Botanical Expedition no. 1031. 7 Sept. 1986. Holotype in A.

Vine. Stem herbaceous, 3–4 mm diameter, densely appressed sericeous. Stipules unknown but leaving an oval scar. Leaves pinnately trifoliolate, 20–30 cm long; leaflets chartaceous, upper surface sparsely appressed short sericeous (hairs 0.5–0.8 mm long), under surface uniformly sericeous, lateral nerves prominent on under surface, 5–7 each side of the midrib, looped within margin; terminal leaflet broadly ovate, to 14.5 cm long, 12 cm wide, shallowly three-lobed, along margin, with petiolule (= pulvinus) 5 mm long; lateral leaflets obliquely broadly ovate, entire, almost equal to the terminal one in size, ca.14 cm long, 10 cm wide, apex acute, base rounded, with petiolule (= pulvinus) 4–6 mm long; petiole striate, 9–10 cm long, with appressed short sericeous hairs, each with one stipel at the base of the petiolule of lateral leaflets (or a pair of stipels at the top); rachis 3 cm long, with a pair of stipels at the top; stipels linear, ca. 4 mm long, persistent.

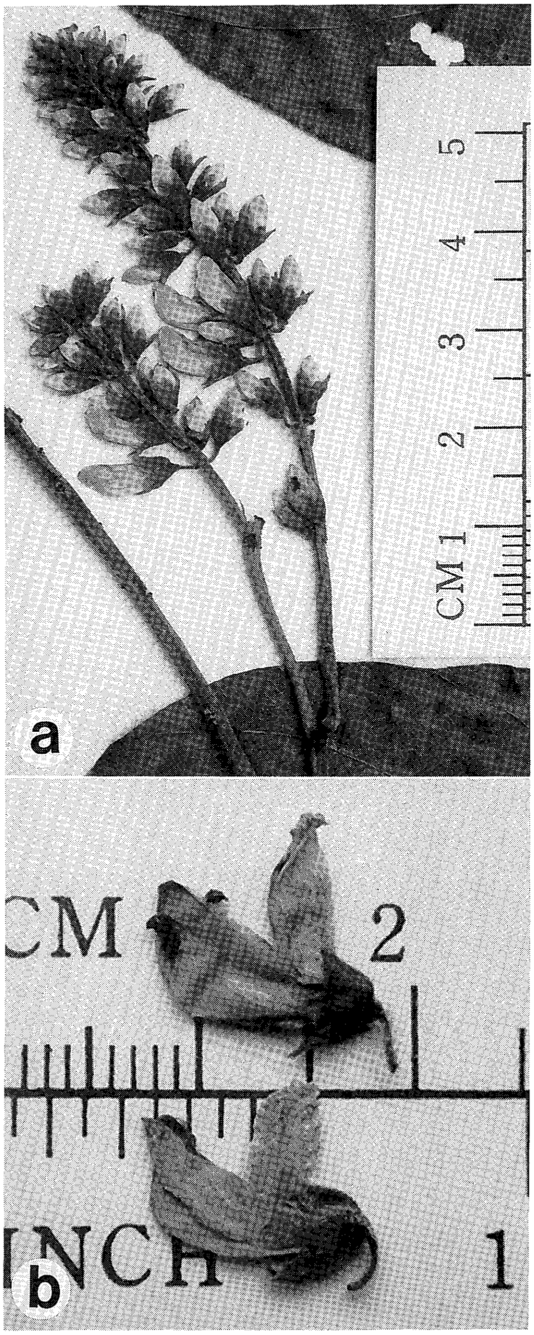

Fig. 2. *Pueraria bouffordii* H. Ohashi. a: Part of inflorescence. b: Flowers.

Inflorescence pseudoraceme, branched, to 17 cm long, bracteate at base, (2–)3-flowered at a node, densely flowered with short internodes; rachis nodose with small nodules, densely sericeous with reflexed hairs. Bracts at the base of rachis 2 to several, deciduous, ovate to broadly ovate, more or less acuminate, 3–5 mm long, 1.5–2.5 mm wide, striate, densely appressed sericeous; those supporting pedicels early deciduous, each one per pedicel, narrowly ovate, 1.5 mm long, 0.7 mm wide, densely sericeous. Pedicels 3–4 mm long, appressed and patent sericeous. Bracteoles 2 at the top of pedicel, ovate, 1–1.5 mm long, 0.5–0.7 mm wide, densely sericeous outside and margin, glabrous inside.

Calyx campanulate with 5 lobes, 5–5.5 mm long, densely appressed sericeous outside, glabrous inside, tube ca. 2.5 mm long; upper 2 lobes connate near to the top, ca. 3 mm long, 4 mm wide at base, obtuse at each apex but emarginate at connate part; lateral lobes 2 mm long, 2 mm wide, apex obtuse; lowest lobes ovate, acuminate at apex, 2.5–3 mm long, 2 mm wide at base. Standard bending adaxially at right-angle at the base of banner, glabrous, clawed at base, banner broadly elliptic, 11–12 mm long, 10–11 mm wide, apex more or less emarginate, base slightly auriculate, callous, claw ca. 1 mm long; wings shallowly incurved, glabrous, ca. 12.5 mm long, banner oblong, 10 mm long, 4 mm wide, obtuse at apex, with a small auricle 1 mm long at base, connate to the keel-petals at slightly basal portion of central banner, claw 2.5 mm long; keel-petals shallowly incurved, glabrous, slightly shorter but wider than the wings, ca. 12 mm long, banner oblong, 9.5 mm long, 5 mm wide, without auricle, obtuse at apex, firmly joined along abaxial margin, claw 2.5 mm long. Stamens monadelphous, with minute openings at both sides of the vexillary stamen at base, 10–10.5 mm long, upper part incurved. Pistil sessile, elongate, flattened, ca. 12.5 mm long, without disk at base; ovary ca. 5 mm long, 7-ovuled, appressed sericeous; style continuous from the ovary but glabrous, thickened below two-thirds, incurved more than right angle at about the middle; stigma terminal, minutely globose, minutely hairy around base. Pods unknown.

The specific epithet is dedicated to Dr. David E. Boufford of the Harvard University Herbaria, not only for the collector of this new species but also for his great contribution to the flora of China.

Pueraria bouffordii is distinct from all the known species of the genus, but it is somewhat similar to a specimen, Henry 13626 (A), in having densely flowered pseudoracemes with 2–3 flowers per node. However, the new species is different from the Henry specimen by the retrorse hairs of the inflorescence axis, branched inflorescence, smaller flowers, shorter calyx-lobes and auriculate keel-petals. Maesen (1985) examined the duplicates of Henry 13626 (BM, NY, US). He recognized the specimen as simply a form of *P. lobata* Ohwi (as *P. montana* (Lour.) Merr. in his work in 1994) or a hybrid between *P. lobata* and *P. edulis* Pamp. I think, however, the Henry 13626 (A) specimen is different from *P. lobata* or *P. montana* in having large inflorescences and in the shape of the flowers.

According to the key to the species of *Pueraria* prepared by Maesen (1994), the new species seems to be near *P. montana, P. maesenii* Niyomdham or *P. alopecuroides* Craib. *Pueraria bouffordii* belongs within 5b in the key, because it is a vine with the flowers are 2–3 per node and more than 12 mm long, short pedicels (less than 6 mm long) and with stipule. In the key, number 6 follows the 5b *P. bouffordii* may belong to 6a which includes pseudoracemes with 1–2 branches, but at the same time it may be referable to 6b that the pseudoracemes with stipule-like bracts at base. If we use 6a, it is close to *P montana* or *P. maesenii*, but using 6b, to *P. alopecuroides*. However, *P. bouffordii* is distinct from these species. From *P. montana*, *P. bouffordii* differs in calyx with slightly longer lowest lobe and obtuse lateral lobes, keel-petals with obtuse apex and entire lamina (without an auricle) in addition to its remarkable characteristics mentioned above. *Pueraria maesenii* is distinguished from *P. montana* in having branched inflorescences, straight vexillum and dilated style at base (Maesen 1985). I could not examine specimens of *Pueraria maesenii*, but it closely resembles *P. montana* var. *chinensis* (Ohwi) Maesen & Almeida (Maesen 1994) or *P. lobata* subsp. *thomsonii* (Benth.) H. Ohashi & Tateishi. From this species *P. bouffordii* differs in having a reflexed vexillum and non-dilated style. From *P. alopecuroides* (Maesen 1985), the new species is distinguished by the leaflets (acuminate ovate-rhomboid in the former) and inflorescences (foxtail-like, with dense flowers and with longer bracts 10–15 mm long in the former).

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大橋広好：**中国貴州省からのマメ科クズ属の一新種**

Harvard 大学植物標本館所蔵の未同定クズ属植物を同定中に，未知種の標本 1 枚をみつけた．1986 年の Sino-American Guizhou Botanical Expedition によって採集されたものであった．同調査隊の D. E. Boufford 博士に問い合わせたところこの植物は 2 点だけの標本を採集できたものであり，1 点は Arnold Arboretum，他は貴州科学院生物研究所にある筈とのことであった．同研究所と連絡できなかったためここでは Arnold Arboretum の標本に基づいて記載する．この植物は茎，葉，小花柄，萼などには上向きの伏毛があるが花序の毛だけが下向きであり，花が小さく，白色で翼弁と龍骨弁では先端だけが紫色となる．これらの特徴はクズ属の既知の種に見られないものであり，1 枚の標本のみに基づいても新種と判断して間違いないと確信している．本新種を *Pueraria bouffordii* H. Ohashi と命名し，Boufford 博士に献名した．

本種に似たものに中国雲南省から採集された標本（Henry 13626）がある．クズ属をまとめた Maesen はこの標本をクズ *P. lobata* (Willd.) Ohwi そのものあるいはクズと *P. edulis* Pamp.（Sikkim, Bhutan, Assam および雲南省に分布する）の雑種と考えた．しかし，Henry 13626 では花序は大形で，その軸上の毛は上向きに伏すものから開出するものまであり，花は *P. bouffordii* の花よりも大きく，萼と花弁の形も異なる．この標本の植物も新種である可能性が高いと思われるが，さらに詳しく調べているところである．*P. bouffordii* はクズと比較しても花序の分岐する特徴で異なっており（ただし，クズでもごくまれに花序の分枝するものがある），別種であると思われる．

（東北大学附属植物園津田記念館）